CLAIMS

1. A method for reinforcing a structure, characterized by disposing a high-ductility material on an outer circumferential surface of a member of the structure so as to confine expansion of apparent volume accompanying rupture of the member, to thereby control rupture of the member.

2. A method for reinforcing a structure as described in Claim 1, wherein the high-ductility material is a fibrous or rubber sheet material.

3. A method for reinforcing a structure as described in Claim 1, wherein the high-ductility material is a fibrous or rubber tape-like sheet material and wound spirally on the member while overlapping at overlap portions.

4. A method for reinforcing a structure as described in Claim 3, wherein the high-ductility material is wound spirally according to the steps of: winding the high-ductility material by a single turn at a winding start end of the member; winding the high-ductility material spirally while the number of overlap turns is sequentially increased until a predetermined maximum number of overlap turns is reached; winding the high-ductility material spirally while the maximum number of overlap turns is maintained along a predetermined length of the member; and winding the high-

ductility material spirally while the number of overlap turns is sequentially decreased such that the high-ductility material is wound by a single turn at a winding termination end of the member.

5. A method for reinforcing a structure as described in Claim 1 or 4, wherein an adhesive layer is formed on at least one side of the high-ductility material, and the high-ductility material is affixed to the member via the adhesive layer.

6. A method for reinforcing a structure as described in Claim 3 or 4, wherein the high-ductility material is wound on the member such that the overlap portions are bonded together and/or such that the high-ductility material is bonded to a surface of the member at at least a single zonal region extending along a length direction of the member.

7. A method for reinforcing a structure as described in Claim 1, wherein the high-ductility material is a fibrous or rubber tape-like sheet material and rolled tightly on the member by a plurality of turns to thereby be rolled in layers such that at least a rolling start end portion of the high-ductility material is bonded to a corresponding portion of an outer surface of the member while a rolling termination end portion of the high-ductility material is bonded to a corresponding portion of an underlying layer of the high-

ductility material.

8. A method for reinforcing a structure as described in Claim 7, wherein the high-ductility material is rolled on the member such that intermediate layers of the high-ductility material are bonded together at least a single zonal region extending along a length direction of the member.

9. A method for reinforcing a structure as described in any one of Claims 1, 4, 5, 6, and 8, wherein the high-ductility material is disposed such that spiral winding described in Claim 3 and rolling described in Claim 7 are combined.

10. A method for reinforcing a structure as described in Claim 9, wherein the high-ductility material is spirally wound on the member along an overall length of the member as described in Claim 3 before or after the high-ductility material is rolled on the member at upper and lower end portions of the member as described in Claim 7.

11. A method for reinforcing a structure as described in Claim 1, wherein the high-ductility material is formed through application of a rubber or resin viscous-material to the member.

12. A method for reinforcing a structure as described in any one of Claims 1 to 11, wherein the high-ductility material is

disposed such that a cavity or a weak layer is interposed between the high-ductility material and the member.

13. A configuration for reinforcing a structure, characterized by disposing a high-ductility material on an outer circumferential surface of a member of the structure so as to elastically confine expansion of apparent volume accompanying rupture of the member, to thereby control rupture of the member.

14. A configuration for reinforcing a structure as described in Claim 13, wherein the high-ductility material is a fibrous or rubber sheet material.

15. A configuration for reinforcing a structure as described in Claim 13, wherein the high-ductility material is a fibrous or rubber tape-like sheet material and wound spirally on an outer surface of the member in a fixed and overlapping condition.

16. A configuration for reinforcing a structure as described in Claim 15, wherein the high-ductility material is wound spirally according to the steps of: winding the high-ductility material by a single turn at a winding start end of the member; winding the high-ductility material spirally while the number of overlap turns is sequentially increased until a predetermined maximum number of overlap turns is

reached; winding the high-ductility material spirally while the maximum number of overlap turns is maintained along a predetermined length of the member; and winding the high-ductility material spirally while the number of overlap turns is sequentially decreased such that the high-ductility material is wound by a single turn at a winding termination end of the member.

17. A configuration for reinforcing a structure as described in Claim 12 or 16, wherein an adhesive layer is formed on at least one side of the high-ductility material, and the high-ductility material is affixed to the member via the adhesive layer.

18. A configuration for reinforcing a structure as described in Claim 15 or 16, wherein the high-ductility material is wound on the member such that the overlap portions are bonded together and/or such that the high-ductility material is bonded to a surface of the member at at least a single zonal region extending along a length direction of the member.

19. A configuration for reinforcing a structure as described in Claim 13, wherein the high-ductility material is a fibrous or rubber tape-like sheet material and rolled tightly on the member in a plurality of layers such that at least a rolling start end portion of the high-ductility material is bonded to a corresponding portion of an outer surface of the member

while a rolling termination end portion of the high-ductility material is bonded to a corresponding portion of an underlying layer of the high-ductility material.

20. A configuration for reinforcing a structure as described in Claim 13, wherein the high-ductility material is disposed such that spiral winding described in Claim 15 and rolling described in Claim 19 are combined.

21. A configuration for reinforcing a structure as described in Claim 20, wherein the high-ductility material is spirally wound on the member along an overall length of the member as described in Claim 15 before or after the high-ductility material is rolled on the member at upper and lower end portions of the member as described in Claim 19.

22. A configuration for reinforcing a structure as described in Claim 13, wherein the high-ductility material is a covering material formed in a layered condition through application of a rubber or resin viscous-material to the member.

23. A configuration for reinforcing a structure as described in Claim 13 or 22, wherein the high-ductility material is disposed such that a cavity or a weak layer is interposed between the high-ductility material and the member.

24. A cored roll of high-ductility material, characterized by comprising a core having a predetermined length and an outside diameter and a high-ductility material having a predetermined length and rolled on the core and characterized in that a plurality of parting lines are drawn on one side of the high-ductility material along a length direction of the high-ductility material, the parting lines enabling equal division of a width of the high-ductility material at any one of two or more different pitches.

25. A cored roll of high-ductility material as described in Claim 24, wherein the parting lines are drawn such that the parting lines can be visually or tactilely discriminated from one another.

26. A method for reinforcing a structure, characterized by fixedly attaching a high-ductility covering material formed of a raw material having an elastic modulus lower than that of a tie hoop to an outer circumferential surface of an existing column supporting the structure, to thereby cause the high-ductility covering material to bear a load imposed on the column after the column is deformed.

27. A method for reinforcing a structure as described in Claim 26, wherein the high-ductility covering material comprises a plurality of surrounding cores disposed around the column in such a manner as to be arranged at

predetermined intervals along a vertical direction, and a fibrous or rubber sheet material connecting the adjacent surrounding cores along the vertical direction, to thereby assume a form of an integral bellows-like reinforcement.

28. A method for reinforcing a structure, characterized in that a high-ductility covering material formed of a raw material having an elastic modulus lower than that of a tie hoop is disposed inside a facing surrounding wall material disposed around an existing column supporting the structure with a cavity interposed between the facing surrounding wall material and the column, to thereby cause the high-ductility covering material to bear a load imposed on the column after the column is deformed.

29. A method for reinforcing a structure as described in Claim 28, wherein the high-ductility covering material comprises a plurality of surrounding cores disposed around the column with the cavity interposed therebetween in such a manner as to be arranged at predetermined intervals along a vertical direction, and a fibrous or rubber sheet material connecting the adjacent surrounding cores along the vertical direction, to thereby assume a form of an integral bellows-like reinforcement.

30. A configuration for reinforcing a structure, characterized by fixedly attaching a high-ductility covering

material formed of a raw material having an elastic modulus lower than that of a tie hoop to an outer circumferential surface of a column supporting the structure.

31. A configuration for reinforcing a structure as described in Claim 30, wherein the high-ductility covering material comprises a plurality of surrounding cores disposed around the column in such a manner as to be arranged at predetermined intervals along a vertical direction, and a fibrous or rubber sheet material connecting the adjacent surrounding cores along the vertical direction, to thereby assume a form of an integral bellows-like reinforcement.

32. A configuration for reinforcing a structure, characterized in that a high-ductility covering material formed of a raw material having an elastic modulus lower than that of a tie hoop is disposed inside a facing surrounding frame disposed around a column supporting the structure with a cavity interposed between the facing surrounding frame and the column.

33. A configuration for reinforcing a structure as described in Claim 32, wherein the high-ductility covering material comprises a plurality of surrounding cores disposed around the column with the cavity interposed therebetween in such a manner as to be arranged at predetermined intervals along a vertical direction, and a fibrous or rubber sheet material

connecting the adjacent surrounding cores along the vertical direction, to thereby assume a form of an integral bellows-like reinforcement.

34. A high-ductility material, characterized by being disposed on an outer circumferential surface of a member of a structure; having an adhesive layer formed on at least one side thereof; and being affixed to the member via the adhesive layer.

35. A high-ductility material, characterized by being disposed on an outer circumferential surface of a member of a structure and characterized in that the high-ductility material is wound on the member such that overlap portions are bonded together and/or such that the high-ductility material is bonded to a surface of the member at at least a single zonal region extending along a length direction of the member.

36. A high-ductility covering material, characterized by comprising a plurality of surrounding cores disposed around the column in such a manner as to be arranged at predetermined intervals along a vertical direction, and a fibrous or rubber sheet material connecting the adjacent surrounding cores along the vertical direction, to thereby assume a form of an integral bellows-like reinforcement.

37. A high-ductility covering material, characterized by comprising a plurality of surrounding cores disposed around the column with a cavity interposed therebetween in such a manner as to be arranged at predetermined intervals along a vertical direction, and a fibrous or rubber sheet material connecting the adjacent surrounding cores along the vertical direction, to thereby assume a form of an integral bellows-like reinforcement.